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मानक

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Mazdoor Kisan Shakti Sangathan

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“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11455-1-3 (1985): Outline dimensions of transformers and inductors for use in telecommunication and electronic equipment, Part 1: Transformers and inductors using YEI-1 Laminations, Section 3: Printed wiring board mounting [LITD 5: Semiconductor and Other Electronic Components and Devices]



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“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

OUTLINE DIMENSIONS OF TRANSFORMERS AND
INDUCTORS FOR USE IN TELECOMMUNICATION AND
ELECTRONIC EQUIPMENT

PART 1 TRANSFORMERS AND INDUCTORS USING
YEI-1 LAMINATIONS

Section 3 Printed Wiring Board Mounting

- 1. Scope** — Specifies the outline dimensions of transformers and inductors, using E&I laminations, built for printed wiring board mounting.
- 2. Laminations** — For the purpose of this specification, the laminations shall conform to the dimensions of Type YEI-1, as prescribed in Table 1 of 'Indian Standard Laminations for transformers and inductors for use in telecommunication and electronic equipment: Part 2 Preferred ranges of laminations, Section 1 Lamination type YEI-1' (*under preparation*).
- 3. General** — The styles and mounting methods are based upon proven methods of assembly. In particular, dimensions are established which allow for the use of safety type coil formers, where required, on all the assembly styles.

On the larger sizes of laminations, a range of stack heights allows continuous variation of power rating. The increment of stack height follows the R10 series of preferred numbers (*see IS : 1076-1967*) as a multiple of the width of the centre limb of the lamination. The stack height is shown as nominal and is open to small variations within the proposed outline dimensions and fixing centres. A suffix is used to designate the appropriate stack size, as shown below:

Suffix Letter	Multiple of Centre Leg of Lamination
a	0.5
b	0.63
c	0.8
d	1.0 (that is square stack)
e	1.25
f	1.6
g	2.0

The data provided in 4, give the dimensions of:

overall dimensions	(A, B, C)
positioning of mounting holes	(D ₁ , D ₂)
fixing hole size	(G)
stack size	(S)

3.1 Tolerances — The dimensions, except where indicated as maximum or nominal, shall have tolerances in accordance with the requirements of IS : 919 (Part 1)-1963 'Recommendations for limits and fits for engineering; Part I General engineering (*first revision*)'. The appropriate tolerance is shown at the head of each column in the Table 1.

4. Printed Wiring Board Style

4.1 The dimensions specified in Table 1 correspond to assemblies using laminations YEI 1-10 to YEI 1-25 in accordance with the outline drawing of Fig. 1.

5. Bobbins

5.1 Terminal Spacings — Bobbins have spacings of 5.08 mm on all terminal strips.

5.2 Mounting Pillars — The use of mounting pillars on core bolt centres is advisable on sizes 20 to 25 and is optional on sizes 14 to 18. If mounting pillars are incorporated these shall not affect overall height 'C'.

5.3 Terminals — Terminated bobbins shall be accepted by a gauge having 1.2 mm dia holes on true position.

Transformers and Inductors for Electronic Equipment Sectional Committee, LTDC 8 [Ref : Doc : LTDC 8(817)]

TABLE 1 DIMENSIONS FOR PWB MOUNTING STYLE

(Clause 4.1)

All dimensions in millimetres.

Core Designation	S Nom	A Max	B Max	C Max	D ₁ ±IT12	D ₂ ±IT12	G ±½IT14	X	No. of Pins on Pitch X	Y
YE 1-10 d	10	32	30	24	—	—	—	5·08	2×5	17·78
YEI 1-13 d	13	41	34	31	—	—	—	5·08	2×6	22·86
YEI 1-14 d	14	44	37	34	35	28	3·5	5·08	2×6	25·4
YEI 1-16 d	16	51	43	38	40	32	3·5	5·08	2×7	27·94
YEI 1-18 d	18	57	48	43	45	36	3·5	5·08	2×7	30·38
YEI 1-20 d	20	63	53	48	50	40	3·5	5·08	2×8	33·02
YEI 1-22 d	22	69	58	53	55	44	4·5	5·08	2×9	35·56
YEI 1-25 d	25	78	66	60	62·5	50	4·5	5·08	2×10	40·64

Dimensions S and C are for bobbins of preferred stack size, that is, stack=centre leg width.

Non-preferred stack sizes should follow the R10 progression.

Height C includes an allowance of 1 mm between bobbin and printed wiring board for gas venting.

Dimensions A, B and C include an allowance for varnishing.

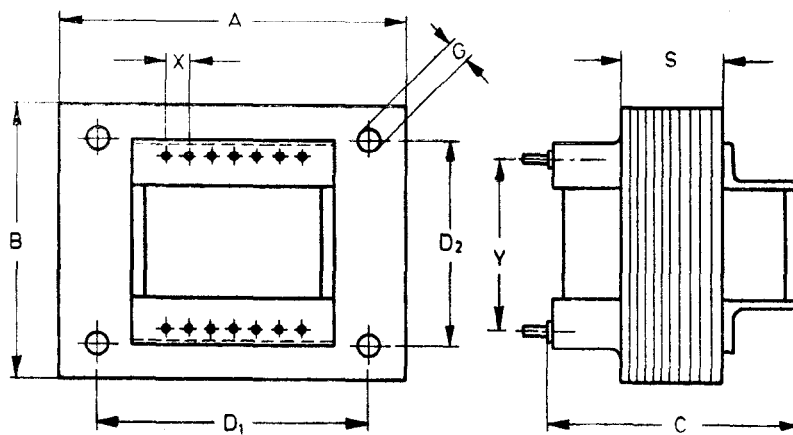


FIG. 1 PWB MOUNTING STYLE FOR LAMINATIONS YEI 1-10 to YEI 1-25

6. Grid Plans

6.1 Grid Plans for PWB Termination Holes and Outline Plan, Sizes YEI 1-10 to YEI 1-25— The module for these plans is 2·54 mm. The pin numbering corresponds to the viewpoint from underneath the whole assembly. The plans for various sizes of laminations are given in Fig. 2A to 2H.

The terminal pins and overall outline dimensions should be symmetrical about the two centre lines.

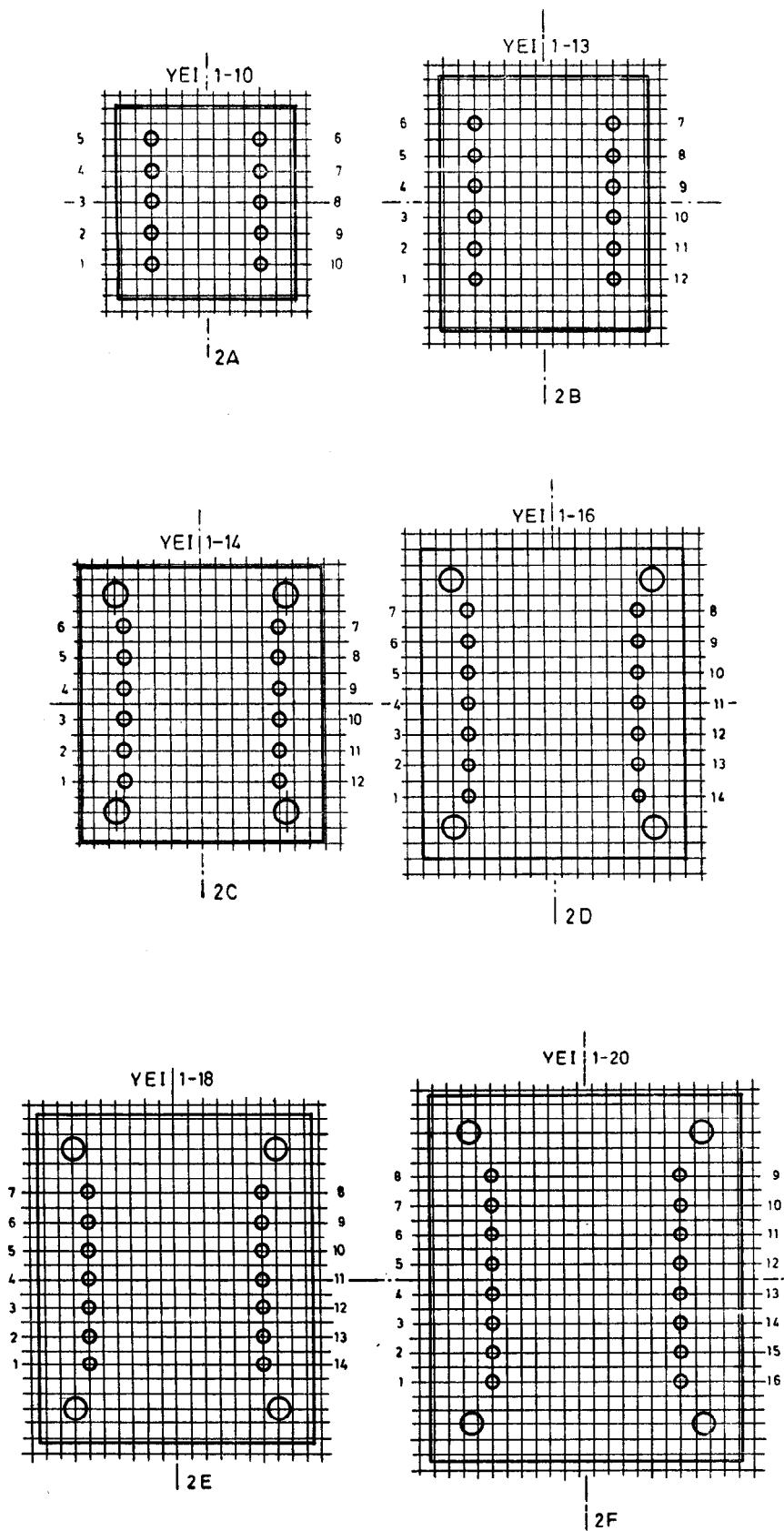


FIG. 2 GRID PLANS, SIZES YEI 1-10 TO YEI 1-25 (Continued)

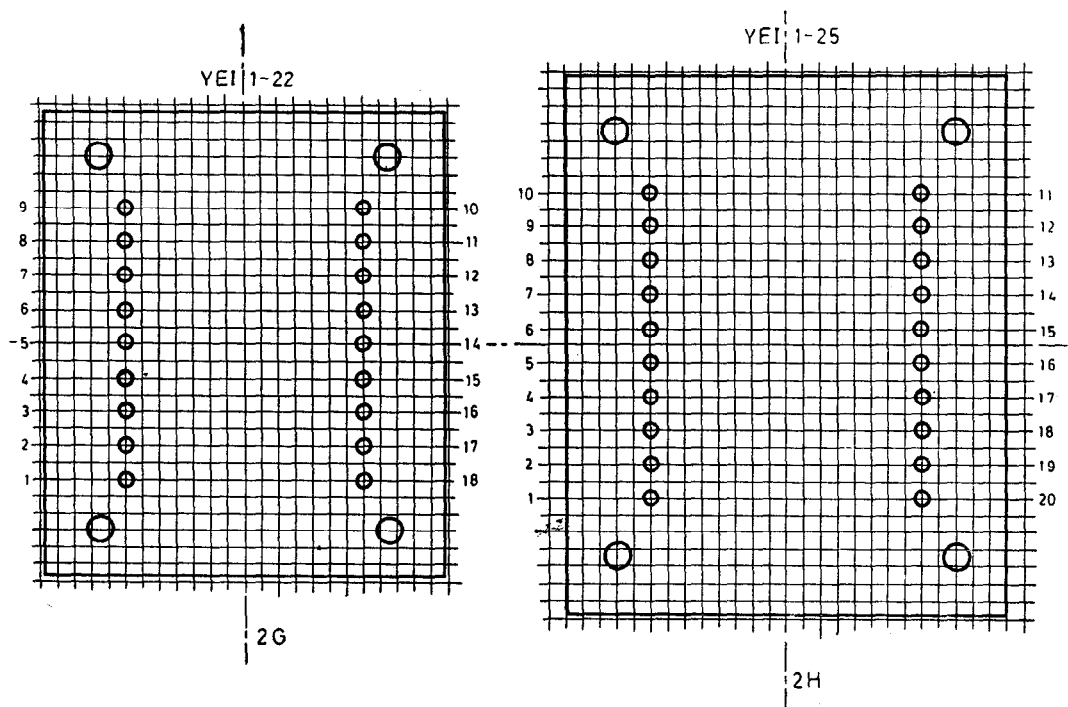


FIG. 2 GRID PLANS, SIZES YEI 1-10 TO YEI 1-25

EXPLANATORY NOTE

The object of this series of standards is to standardize the outline dimensions of transformers and inductors for use in telecommunication and electronic equipment. The Part 1 of this series covers transformers and inductors using YEI-1 laminations built for the three most commonly used forms of mounting styles given in the following three sections:

- Section 1 Universal mounting
- Section 2 U-clamp mounting
- Section 3 Printed wiring board mounting

This standard is based, without any technical change, on IEC document 51 (C.O.) 249 'Draft specification for outline dimensions of transformers and inductors for use in telecommunication and electronic equipment: Part I Transformers and inductors using YEI-1 laminations', issued by the International Electrotechnical Commission (IEC).